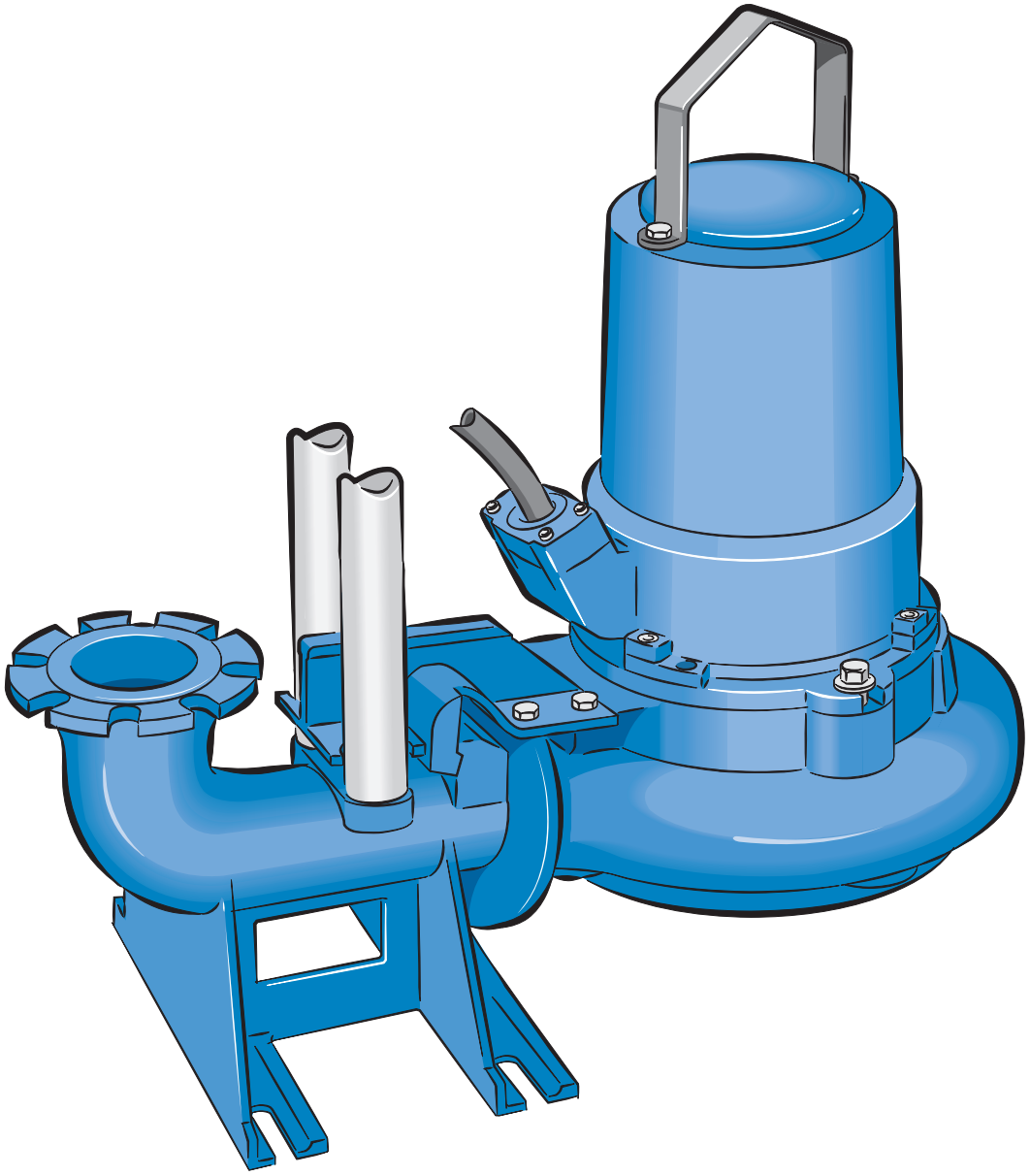
K 80/83/87/100/150.58.0410.Eng/Digital

# K 80, 83, 87, 100, 150

## SERVICE INSTRUCTION



SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150

K 80/83/87/100/150.58.0410.Eng/Digital

This service manual covers the pumps K80, K83, K87, K 100 and K150 in following designs:

## Type F Wet Pit Installation

Installed on a guide rail system with a quick-release base elbow, the base elbow is bolted to the floor of the sump. The volute is equipped with an adapter to be connected to the discharge elbow. Two twin guide rails are mounted to the discharge elbow to steer the pump into right position when hoisted up and down.

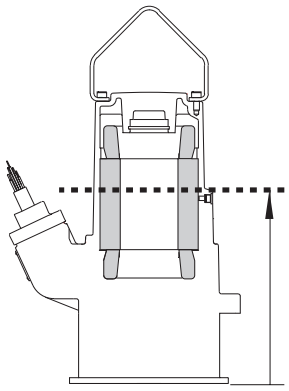
## Type T, Dry Pit Installation

Installed in a normally dry well, but still fully submersible. The pump is supported by an adjustable fabricated steel stand, mounted at the factory. The height of the stand is sufficient for the standard suction elbow to be used on a flat floor. The pump volute is drilled or threaded on the connection-flange and equipped with studs on the suction flange. The motors are equipped with a maintenance-free internal, closed loop cooling system which dissipates the heat to the liquid that is being pumped.

## Type P, Wet Pit Portable or fixed installation

A version of pump which is suitable for temporary or permanent installations. The pump is equipped with a fabricated steel stand and either a threaded (BSP, NPT) or plain hose connection. The motor can if required, be equipped with a maintenance-free internal, closed loop cooling system which dissipates the heat to the liquid that is being pumped.

When installed without a cooling jacket, the minimum water level in the wet well for continuous operation should not be below the top edge of the pump house. Intermittent operation down to a water level above half the height of the stator is acceptable, see picture. For continuous operation at water levels below the top edge of the pump house, an internal cooling jacket is recommended.



The pumps are divided into three categories: Standard, Ex and Fm. The difference between the three is the wear plate. In the standard version there is a hole drilled for the moisture switch. On the Ex there is no hole and the Fm version has a threaded hole.

## The Volute

The volutes are equipped with adjustable wear rings as standard. The volute on the K83 and K87 is only available in the Vortex impeller design and has got no wear rings.

| CE PUMPEX | | | |
|---|---|---|---|
| ▽ 20 m | K 80 ① | | |
| No 99999999 ② | P.2 2.0 kW ⑤ | 3 Ph 50 Hz ⑦ | |
| U 400 V Y ③ | n 1385 rpm ⑥ | Class F IP68 ⑧ | |
| I 5,4 A ④ | | 98 kg ⑨ | |
| PUMPEX Box 5207 S - 12116 JOHANNESHOV SWEDEN | | | |

1 Type of pump
2 Serial number
3 Working voltage
4 Rated current
5 Rated output
6 Engine speed
7 Frequency
8 Winding class
9 Weight

SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150

K 80/83/87/100/150.58.0410.Eng/Digital

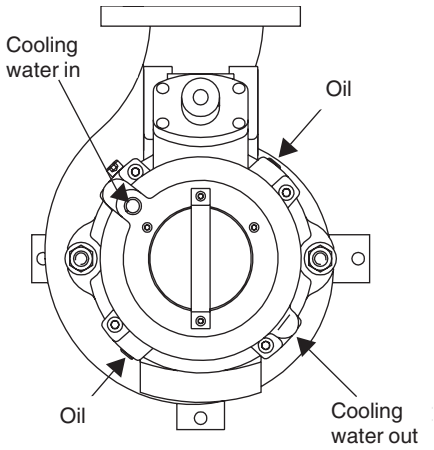
***Warning !***
***The pump and its electrical cables must be disconnected from any power source by a qualified electrician before any inspection or service is performed!***

## Removal from the wet well

Hoist the pump from the sump and rinse clean.

## Disassembling the volute

The driving unit is connected to the volute with two nuts. Loosen them and lift off the driving unit.




## Changing the oil

Remove the two oilplugs. Slant the pump and discard used oil in accordance with local regulations. Fasten one of the plugs. Fill with new oil and fasten the second plug.

Type of oil: white oil (Enerpar M002 or similar).

| | K 80/83 | K 87/100/150 |
|---|---|---|
| Qty. without the cooling mantle (l): | 1,2 | 2,2 |
| Qty. with the cooling mantle (l): | 0,32 | 0,45 |

## Changing the cooling liquid

Loosen the cooling liquid plugs so that the old water can pour out. Then replug the lower plug. Hold the pump, facing the plug and slant it toward you ca 30 degrees. Slowly fill the new water, use a funnel or similar because of the air bubbles that will obstruct the filling.

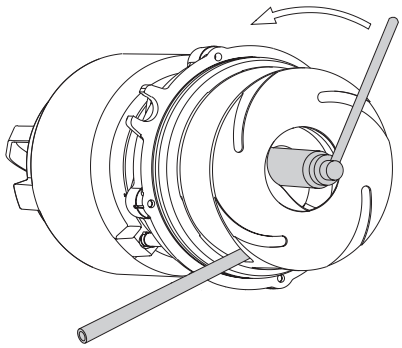
| | K 80/83 | K 87/100/150 |
|---|---|---|
| Cooling liquid, quantity (l): | 1.75 / 4* | 3.2 / 6,2* |

(30% Propylene glycol DOWCAL ® 20)

* = valid from serial number: K80: 80003480, K83: 83100880, K87: 87000350, K100: 10002000 and K150: 15000074

## Disassembling the impeller

The impeller is bolted to the shaft with a washer and a bolt. Securing the impeller, remove the impeller bolt with a wrench.

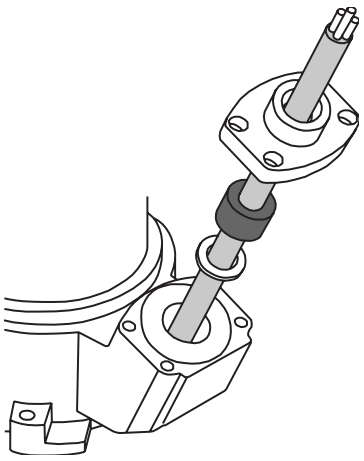


## Disassembling the seal cartridge

Disassemble volute and impeller as above, and empty the motor of cooling liquid and oil. Lay the rotating element on its side. Remove the four screws that holds the seal cartridge. The cartridge can be removed from the oil chamber by inserting the set screws into the "jacking holes" in the cartridge, which will force the cartridge from the housing.

## Changing the cable seal

If water has gotten through the cable seals to the terminal board area, the connection seals has to be replaced. The cable gland seal should be replaced after every disassembly of the cable gland.



Measure the cable diameter with a slide gauge and compare with the holes in the cable gland seal and the spacers so that the dimensions are alike. Pull the seal onto the cable with one spacer underneath. Pull the cable as far through the cover so that a new part of the cable gets jammed when tightening the cable gland. Tighten the four scews of the cable gland.

## Disassembling the cooling jacket

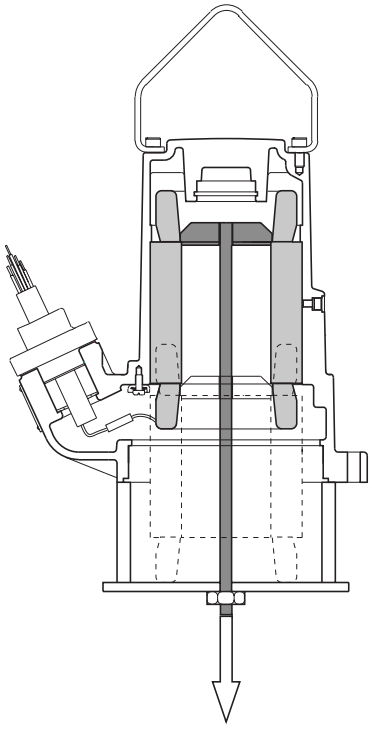
Remove the four screws that holds the outer casing and the handle. Lift them off.

## Changing the stator unit

If the motor protection trips repeatedly, the stator has to be overhauled. Disconnect the pump from the electric box. Check the isolation resistance of the motor at the loose end of the cable. Use a megger. If using a 500 V megger the isolation resistance shall exceed 1 mega-ohm. This applies to phase to phase readings as well as between each phase to ground.

If any problems occurs, disconnect the cable from the stator and measure directly at the stator. If the isolation resistance is less than 1 megaohm the stator should be dried in an oven. Also check the circuit with the built-in thermal overload switches using a buzzer or a bell. If the circuit is open, probably one of the overload switches is defective and should be located by testing each one. The defective switch is bypassed according to the connection scheme on page 8.

If the stator still can´t be used, it has to be replaced. Disconnect the stator from the outgoing cables and disassemble it. Order a exchange stator unit from the nearest Pumpex Service Center.



## Disassembling the stator

Remount the handle as it was before the disassembly of the cooling jacket. Remove the four screws that holds the stator casing. Gently, with a hoist, lift the stator casing from the shaft.

Remember that the rotor and the upper bearing can follow if the impeller is disasssembled when lifting. If this happens, the rotor can easily be pulled out by only using the hands. Disconnect from withunder the cables from the stator. Put the stator unit on a distance tube. Take the pressure tool from withunder and put it on the stator. Pull the stator out of the casing.

## Disassembling the rotor and bearings

The rotor is mounted in the oil chamber with an upper and lower bearing. The lower bearing is held in place by the seal cartridge and the rotor by the impeller. Carefully lift out the rotor with the upper bearing from the oil housing.

Bearings that has been in contact with water or that are damaged should always be replaced. Place the withdrawing tool on the upper bearing and see to that it pulls the inner ring. The lower bearing is in the bearing seat on the bottom side of the oil housing. To reach the lower bearing the seal cartridge has to be disassembled.

## Assembling

Clean all O-ring grooves and all other contact surfaces carefully. Use a wire brush when necessary.

Lubricate all O-rings with oil or grease to prevent the O-rings from getting stuck or damaged when remounted. Also lubricate the threads on all the screws to facilitate disassembling when serviceing next time.

## Mounting the bearings

Check that the shaft is straight and that the key way isn´t damaged. Polish eventual scratches and burrs off. Push the upper bearing into its place. If a press isn´t available, heat the bearing to 100-120° C in a oilbath. Wipe clean the shaft contacting surfaces of the bearing and mount it.

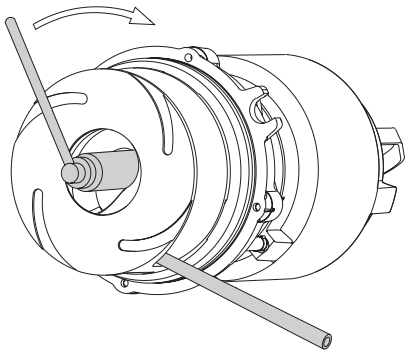
Place the bearing cover on the shaft and mount the lower bearing by using only your hands. Don´t forget to refill the bearings with grease. The lower bearing is mounted on the shaft when the shaft/rotor is mounted in the oil housing.

## Mounting the rotor in the oil housing

Push the lower bearing into the bearing seat by pushing lightly with your hand at the end of the shaft. Hold the seal cartridge still as said below. Push the shaft down from above. Lock the rotor by fastening the impeller.

## Mounting the seal cartridge

Put down the driving unit. Lubricate the shaft and all four o-rings on the seal unit (three external on the seal housing and one internal in the seal cap). Carefully push the seal unit onto the shaft, and place it in position by aligning the screw holes. Do not use hard striking tools Tighten the seal unit by fastening the four screws. **NOTE! Never run the motor without having the impeller mounted, if the seal is mounted. This can cause damage to O-rings in seal.**



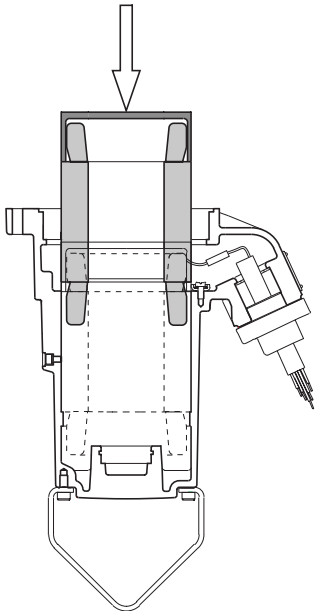
## Mounting the impeller

Turn the shaft so that the key way is upward. Put the key in its groove and push the impeller onto the shaft. Lock the impeller from rotating with a pipe or similar and fasten the impeller washer and screw.

## Mounting the stator

Push the stator in with the pressure tool. Pull the outgoing cable through the cable seal. Connect the cables to the stator and mount the cable cover.

Erect the oil housing and clean all contact surfaces between oil housing and the stator unit with a wire brush. Lubricate and mount a new O-ring on the oil housing. The stator is now ready to be mounted on the oil housing.



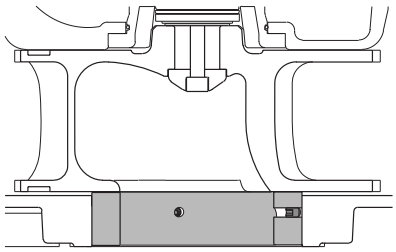
Lift the stator with a lift device and carefully lower it over the rotor. See to that the rotor does not damage the windings or the stator stick. Fasten the stator with the four screws.

## Mounting the cooling jacket

Mount the external cooling pipes. Lower the cooling jacket over the stator casing so that the internal cooling pipe comes straight above the screw for cooling liquid change. Fasten the stator with the four screws. **Note! Don´t forget to fill cooling liquid!**

**Mounting the rotating element to the volute**
Place the driving unit in the volute. Fasten the two nuts.

**Adjusting the wear ring**
Lay the pump down on its side and check the clearance inbetween impeller and wear ring. The clearance should be 0,7 mm maximum.



The wear ring is placed on the bottom side of the volute and is fastened by three screws placed horizontally. Loosen these screws and adjust with the three vertically placed screws.

When necessary strike carefully with a hammer or plastic club. When the distance is adjusted the horizontally placed screws can be tightened.

**Note! This applies only if using channel impeller. If using vortex impeller do not adjust the wear ring!**

The K83 and K87 does not have a wear ring due to the vortex design.

**Testing**
Connect the cables to the electric mains and start the pump. This should only be done by a qualified electrician. The arrow on the cover indicates the direction of rotation - clockwise, when viewed from the top of the motor. The starting reaction will be in the opposite direction.

***Attention!***
***Remember to check the lifting loop and screws each time the pump is hoisted from the pit.***

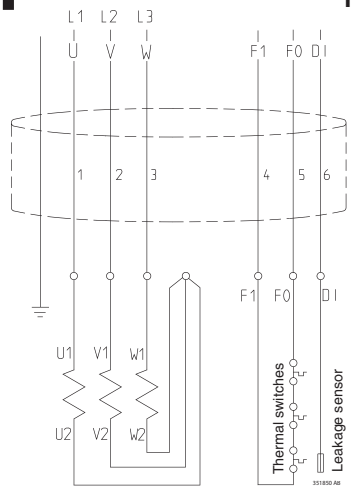
SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150

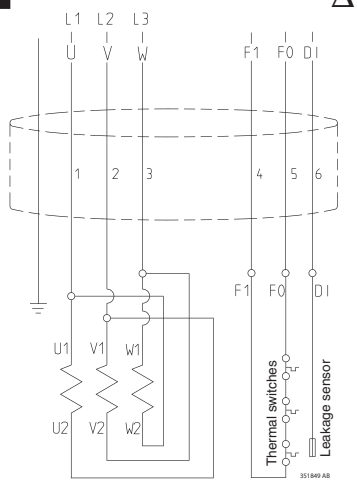
K 80/83/87/100/150.58.0410.Eng/Digital

## 50 Hz

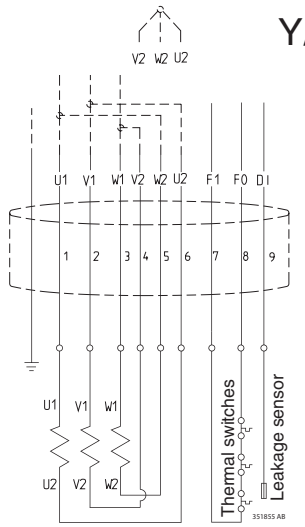
**1** Y




**2** Δ

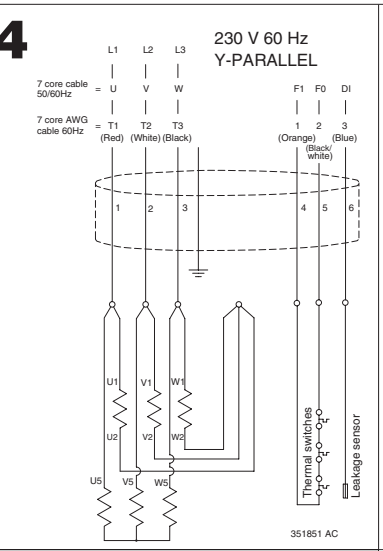



**3** Y/Δ

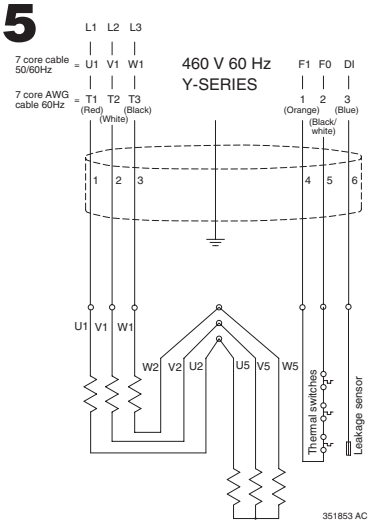



## 60 Hz

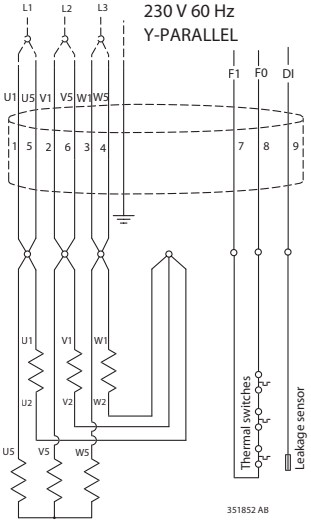
**4** 230 V 60 Hz Y-PARALLEL


L1 L2 L3
7 core cable 50/60Hz = U V W
7 core AWG cable 60Hz = T1 (Red) T2 (White) T3 (Black)
F1 F0 DI
1 (Orange) 2 (Black/white) 3 (Blue)
1 2 3 4 5 6
U1 V1 W1
U2 V2 W2
U5 V5 W5
Thermal switches
Leakage sensor
351851 AC

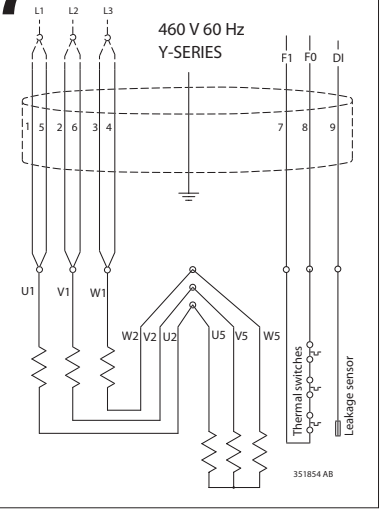
**5** 460 V 60 Hz Y-SERIES


L1 L2 L3
7 core cable 50/60Hz = U1 V1 W1
7 core AWG cable 60Hz = T1 (Red) T2 (White) T3 (Black)
F1 F0 DI
1 (Orange) 2 (Black/white) 3 (Blue)
1 2 3 4 5 6
U1 V1 W1
W2 V2 U2 U5 V5 W5
Thermal switches
Leakage sensor
351853 AC

**6** 230 V 60 Hz Y-PARALLEL




**7**

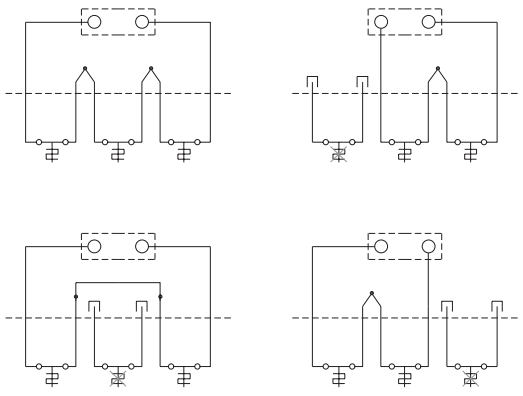


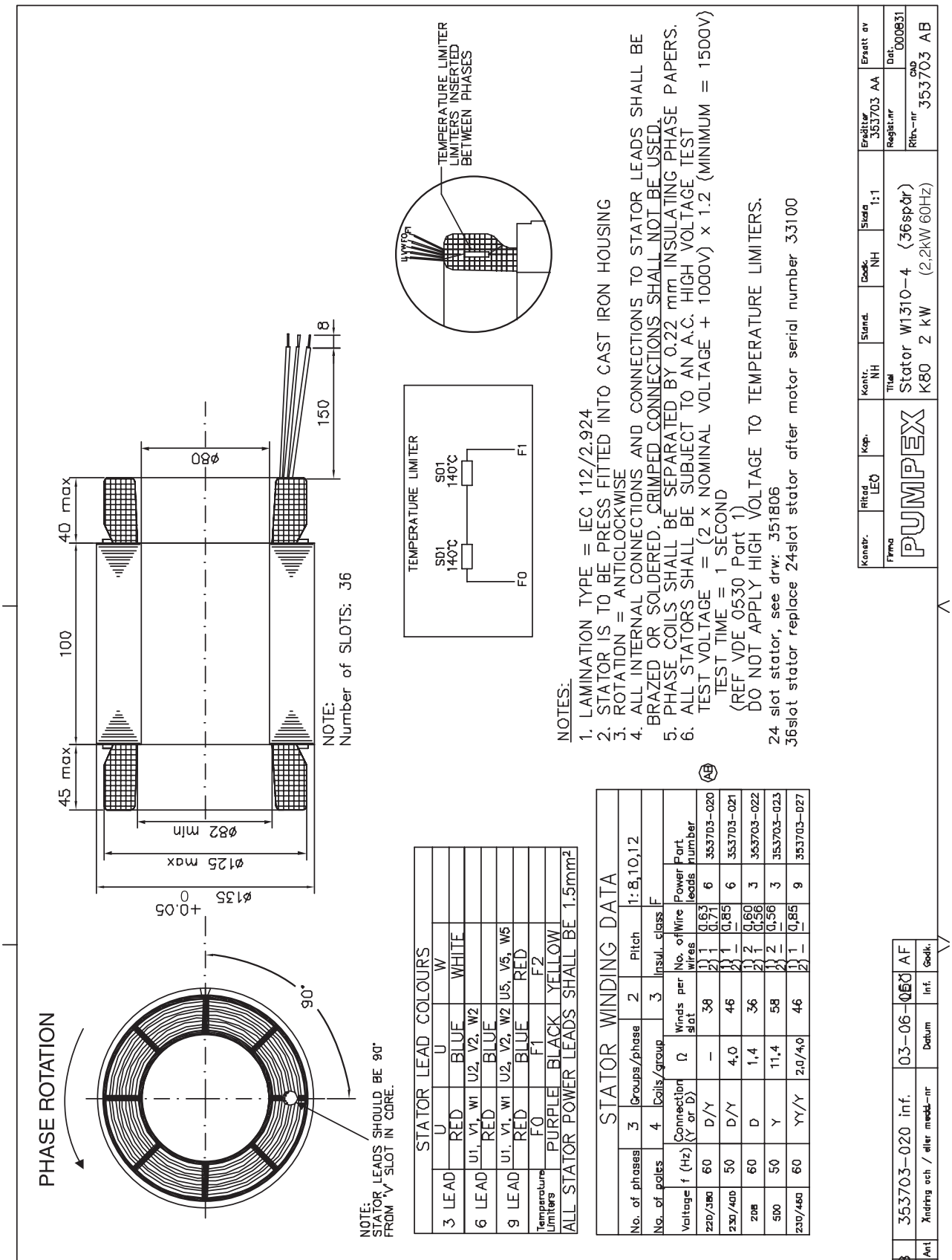

## Tightening factor

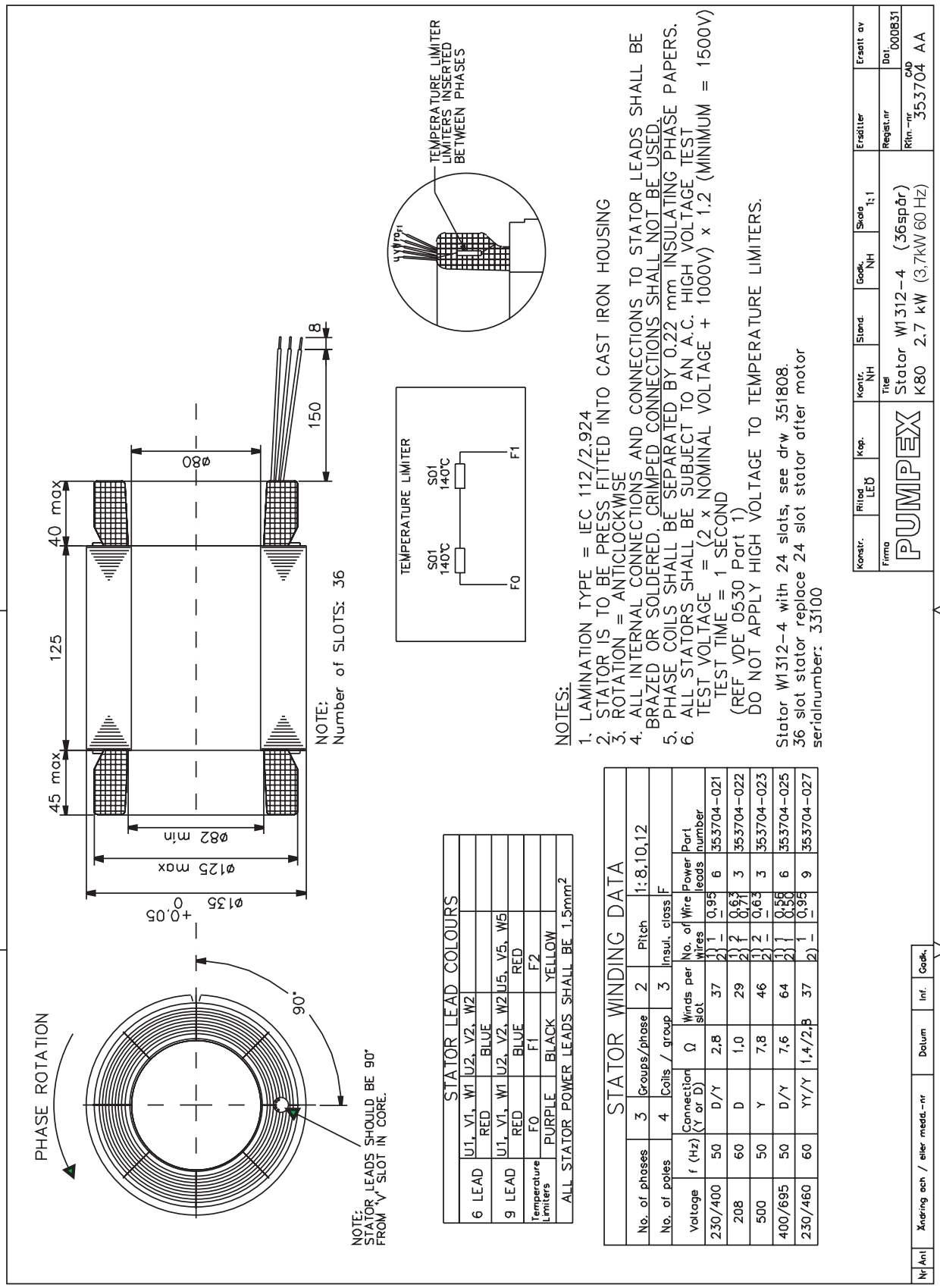
Specification for screws included in pump

| Size | [Nm] |
|---|---|
| M6 | 7 |
| M8 | 17 |
| M10 | 33 |
| M12 | 57 |
| M14 | 91 |
| M16 | 140 |

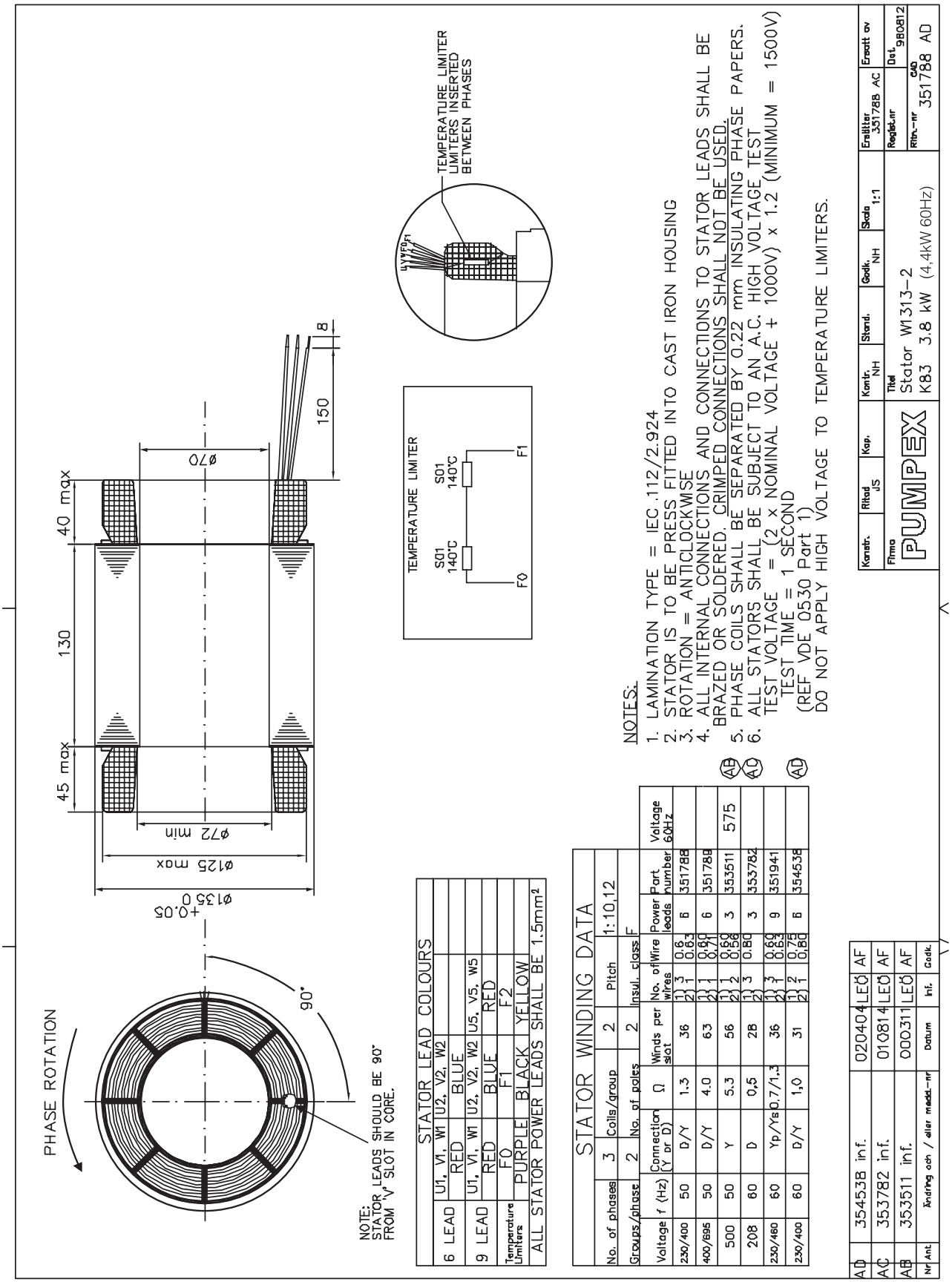
## Connection scheme




PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 90°
FROM 'V' SLOT IN CORE.
ø135 +0.05 0
ø125 max
ø82 min
45 max
100
40 max
ø80
150
8
NOTE:
Number of SLOTS: 36
TEMPERATURE LIMITER
SD1 140°C
SD1 140°C
F1
F0
TEMPERATURE LIMITER LIMITERS INSERTED BETWEEN PHASES
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
24 slot stator, see drw: 351806
36slot stator replace 24slot stator after motor serial number 33100
STATOR LEAD COLOURS
3 LEAD U RED W WHITE
6 LEAD U1, V1, W1 RED U2, V2, W2 BLUE
9 LEAD U1, V1, W1 RED U2, V2, W2 BLUE U5, V5, W5 RED
Temperature Limiters F0 PURPLE F1 BLACK F2 YELLOW
ALL STATOR POWER LEADS SHALL BE 1.5mm²
STATOR WINDING DATA
No. of phases 3 Groups/phase 2 Pitch 1:8,10,12
No. of poles 4 Coils/group 3 Insul. class F
Voltage f (Hz) Connection (Y or D) Ω Winds per slot No. of Wire Power leads Part number
220/380 60 D/Y – 38 1 0,63 6 353703-020
2 0,71
230/400 50 D/Y 4,0 46 1 0,85 6 353703-021
2 –
208 60 D 1,4 36 1 0,60 3 353703-022
2 0,56
500 50 Y 11,4 58 1 0,56 3 353703-023
2 –
230/460 60 YY/Y 2,0/4,0 46 1 0,85 9 353703-027
2 –
Konstr. LEÖ Kap. Kontr. NH Stand. Godk. NH Skala 1:1
Firma PUMPEX
Titel Stator W1310-4 (36spår) K80 2 kW (2,2kW 60Hz)
Ersättar 353703 AA Ersatt av
Registr.nr Dat: 000831
Ritn.-nr CAD 353703 AB
AB 353703-020 inf. 03-06-05 AF
Nr Ant. Ändring och / eller modell-nr Datum Inf. Godk.


PHASE ROTATION
90°
NOTE;
STATOR LEADS SHOULD BE 90°
FROM "V" SLOT IN CORE.
ø135 +0.05 0
ø125 max
ø82 min
ø80
45 max
125
40 max
150
8
NOTE;
Number of SLOTS: 36
TEMPERATURE LIMITER
S01 140°C
S01 140°C
F1
F0
TEMPERATURE LIMITER LIMITERS INSERTED BETWEEN PHASES
U1 V1 W1 F1
STATOR LEAD COLOURS
6 LEAD U1, V1, W1 U2, V2, W2 RED BLUE
9 LEAD U1, V1, W1 U2, V2, W2 U5, V5, W5 RED BLUE RED
Temperature Limiters F0 F1 F2 PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 1.5mm²
STATOR WINDING DATA
No. of phases 3 Groups/phase 2 Pitch 1:8,10,12
No. of poles 4 Coils / group 3 Insul. class F
Voltage f (Hz) Connection (Y or D) Ω Winds per slot No. of Wires Wire Power leads Part number
230/400 50 D/Y 2,8 37 1) 1 – 2) – 0,95 6 353704-021
208 60 D 1,0 29 1) 2 2) 1 0,63 0,71 3 353704-022
500 50 Y 7,8 46 1) 2 2) – 0,63 3 353704-023
400/695 50 D/Y 7,6 64 1) 1 2) 1 0,56 0,50 6 353704-025
230/460 60 YY/Y 1,4/2,8 37 1 2) – 0,95 9 353704-027
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
Stator W1312-4 with 24 slats, see drw 351808.
36 slot stator replace 24 slot stator after motor
serialnumber: 33100
Konstr. Ritad LEÖ Kop.
Firma PUMPEX
Kontr. NH Stand.
Titel Stator W1312-4 (36spår) K80 2.7 kW (3,7kW 60 Hz)
Godk. NH Skala 1:1
Ersättler
Registr.nr
Ritn.-nr 353704 CAD AA
Ersatt av
Dat. 000831
Nr Ant Ändring och / eller medd.-nr Datum Inf. Godk.

K 80/83/87/100/150.58.0410.Eng/Digital


PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 90°
FROM 'V' SLOT IN CORE.
Ø135 0 +0.05
Ø125 max
Ø72 min
45 max
130
40 max
Ø70
150
8
TEMPERATURE LIMITER
SD1 140°C
F0
F1
TEMPERATURE LIMITER
LIMITERS INSERTED
BETWEEN PHASES
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
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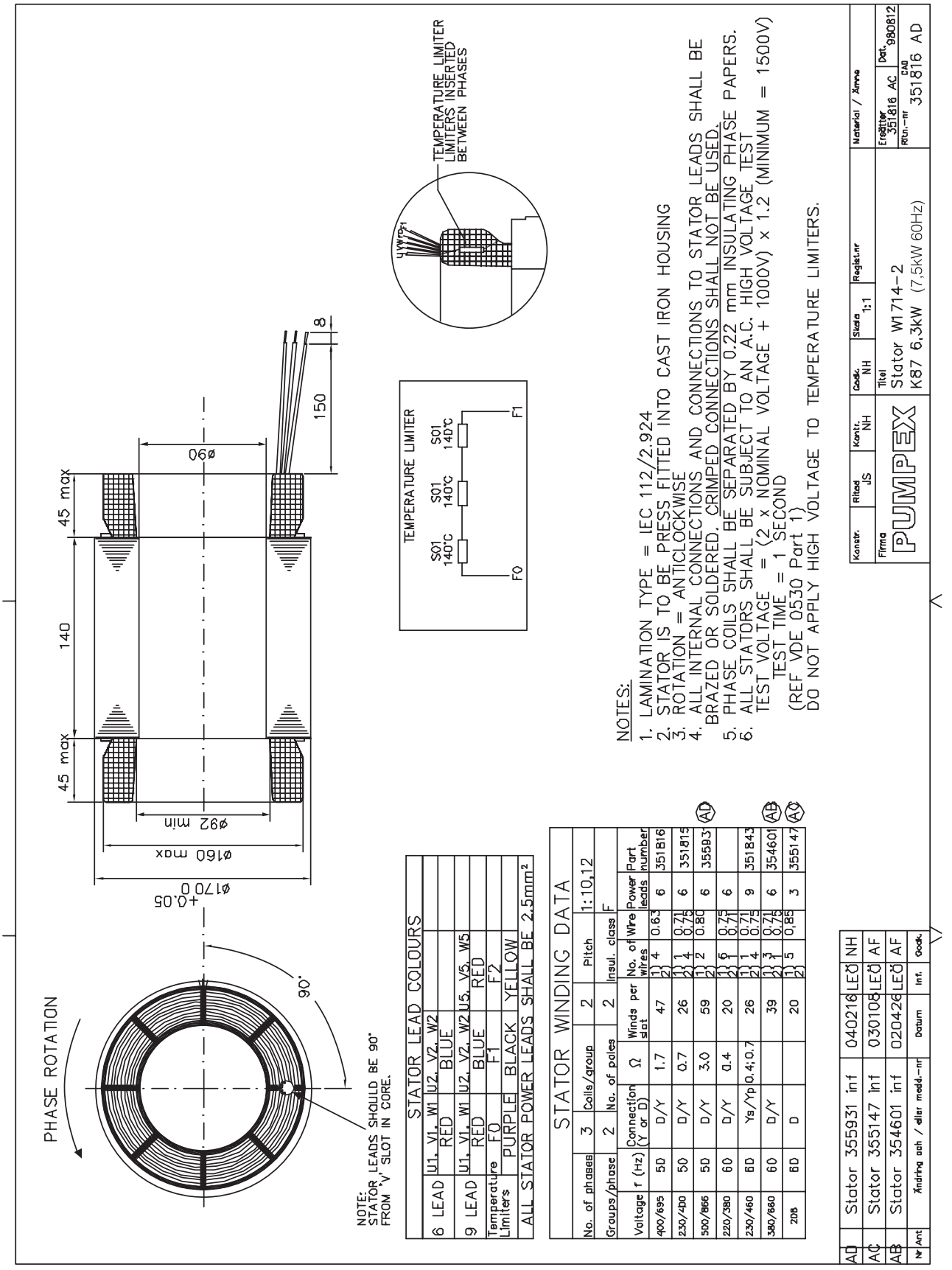
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
STATOR LEAD COLOURS
6 LEAD
U1, V1, W1 U2, V2, W2
RED BLUE
9 LEAD
U1, V1, W1 U2, V2, W2 U5, V5, W5
RED BLUE RED
Temperature Limiters F0 F1 F2
PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 1.5mm²
STATOR WINDING DATA
No. of phases 3 Coils/group 2 Pitch 1:10,12
Groups/phase 2 No. of poles 2 Insul. class F
Voltage f (Hz) Connection (Y or D) Ω Winds per slot No. of Wires Wire Power leads Part number Voltage 60Hz
230/400 50 D/Y 1.3 36 (1) 3 (2) 1 0.6 0.63 6 351788
400/695 50 D/Y 4.0 63 (1) 1 (2) 1 0.60 0.71 6 351788
500 50 Y 5.3 56 (1) 1 (2) 2 0.69 0.56 3 353511 575
208 60 D 0,5 28 (1) 3 (2) 3 0.80 3 353782
230/460 60 Yp/Ys 0.7/1.3 36 (1) 3 (2) 3 0.63 0.71 9 351941
230/400 60 D/Y 1,0 31 (1) 2 (2) 1 0.75 0.80 6 354538
AD 354538 inf. 020404 LEÖ AF
AC 353782 inf. 010814 LEÖ AF
AB 353511 inf. 000311 LEÖ AF
Nr Ant. Ändring och / eller medd-nr Datum Inf. Godk.
Konstr. Rittad JS Kop. Kontr. NH Stand. Godk. NH Skala 1:1
Firma PUMPEX
Titel Stator W1313-2
K83 3.8 kW (4,4kW 60Hz)
Ersätter 351788 AC Ersatt av
Regist.nr Dat. 980812
Ritn.-nr CAD 351788 AD

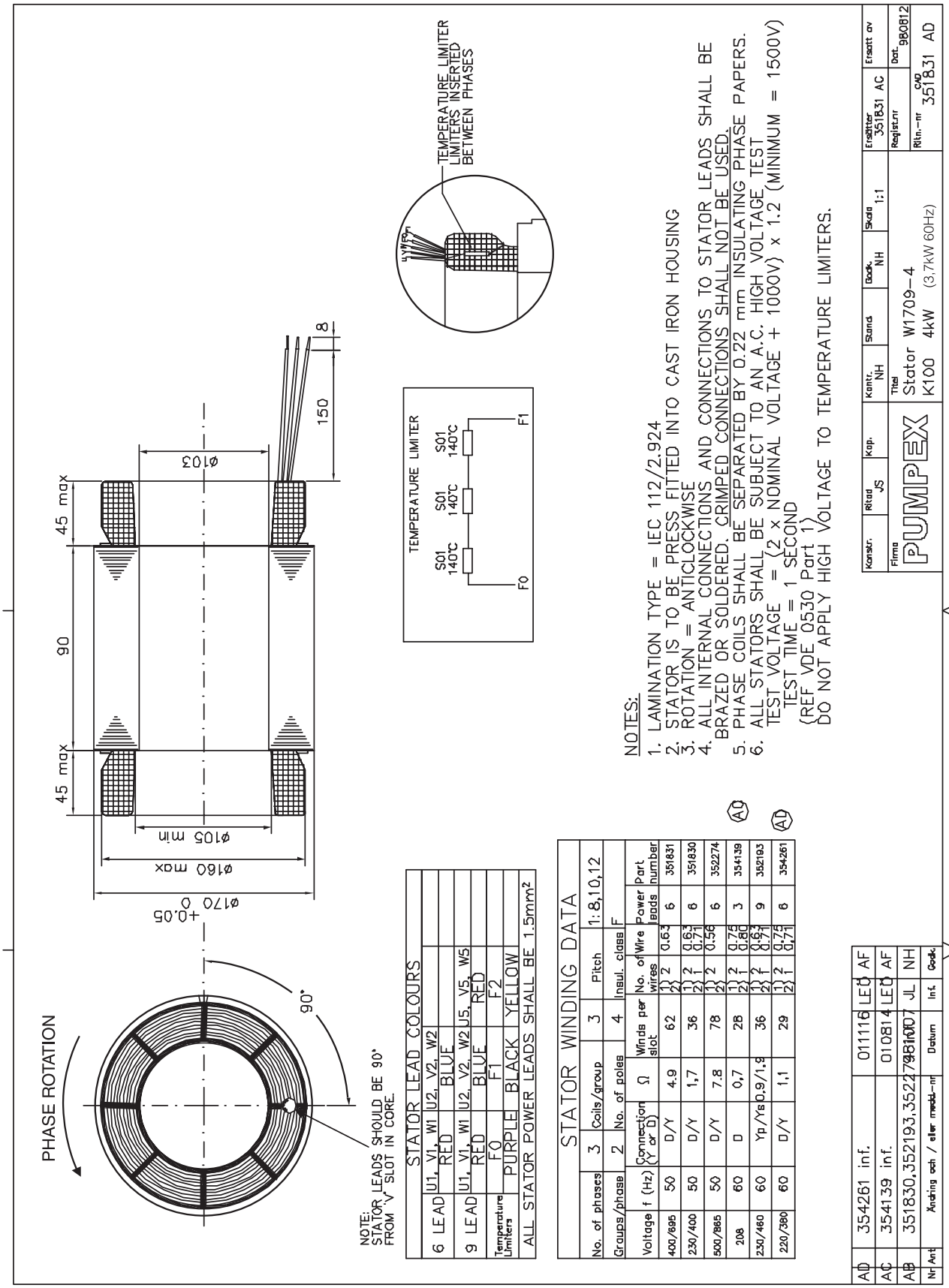
SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150




PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 90°
FROM 'V' SLOT IN CORE.
ø170.0 +0.05
ø160 max
ø92 min
ø90
45 max
140
45 max
150
8
TEMPERATURE LIMITER
S01 140°C
S01 140°C
S01 140°C
F1
F0
TEMPERATURE LIMITER
LIMITERS INSERTED
BETWEEN PHASES
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
STATOR LEAD COLOURS
6 LEAD U1, V1, W1 U2, V2, W2
RED BLUE
9 LEAD U1, V1, W1 U2, V2, W2 U5, V5, W5
RED BLUE RED
Temperature Limiters F0 F1 F2
PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 2.5mm²
STATOR WINDING DATA
No. of phases 3 Coils/group 2 Pitch 1:10,12
Groups/phase 2 No. of poles 2 Insul. class F
Voltage f (Hz) Connection (Y or D) Ω Winds per slot No. of wires Wire Power leads Part number
400/695 50 D/Y 1.7 47 (1) 4 (2) 4 0.63 6 351816
230/400 50 D/Y 0.7 26 (1) 1 (2) 4 0.71 0.75 6 351815
500/866 50 D/Y 3.0 59 (1) 2 (2) 0.80 6 35593
220/380 60 D/Y 0.4 20 (1) 6 (2) 1 0.75 0.71 6
230/460 60 Ys/Yp 0.4;0.7 26 (1) 1 (2) 4 0.71 0.75 9 351843
380/660 60 D/Y 39 (1) 3 (2) 1 0.71 0.75 6 354601
208 60 D 20 (1) 5 (2) 0.85 3 355147
AD Stator 355931 inf 040216 LEÖ NH
AC Stator 355147 inf 030108 LEÖ AF
AB Stator 354601 inf 020426 LEÖ AF
Nr Ant Ändring anh / eller medd.-nr Datum inf. Godk.
Konstr. JS Ritad JS Kontr. NH Godk. NH Skala 1:1 Registr.nr
Firma PUMPEX
Titel Stator W1714-2 K87 6,3kW (7,5kW 60Hz)
Material / Ämne
Ersättar 351816 AC Dat. 980812
Rtn.-nr EAD 351816 AD

K 80/83/87/100/150.58.0410.Eng/Digital


PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 90°
FROM V SLOT IN CORE
ø170 0 +0,05
ø160 max
ø105 min
ø103
45 max
90
45 max
150
8
TEMPERATURE LIMITER
S01 140°C
S01 140°C
S01 140°C
F1
F0
TEMPERATURE LIMITER LIMITERS INSERTED BETWEEN PHASES
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
Konstr. JS
Ritad JS
Kap.
Kontr. NH
Stand
Godk. NH
Skala 1:1
Firma PUMPEX
Titel Stator W1709-4
K100 4kW (3.7kW 60Hz)
Ersätter 351831 AC
Ersatt av
Registrnr
Dat. 980812
Ritn.-nr CAD 351831 AD
AD 354261 inf. 011116 LEO AF
AC 354139 inf. 010814 LEO AF
AB 351830,352193,352274 981007 JL NH
Nr Ant. Ändring och / eller medd-nr Datum Inf. Godk.

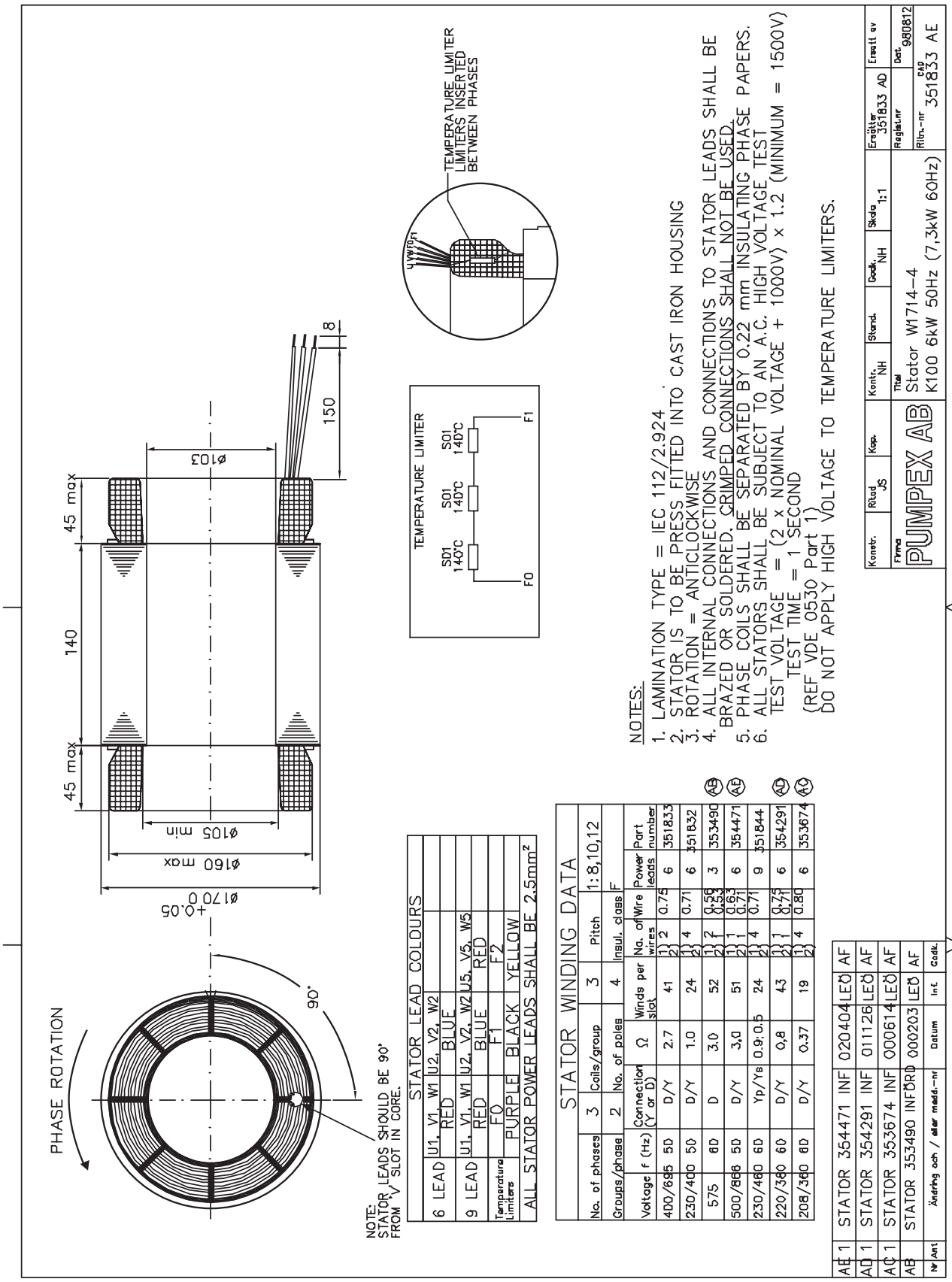
| STATOR LEAD COLOURS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6 LEAD | U1, V1, W1 | RED | U2, V2, W2 | BLUE | | | | | |
| 9 LEAD | U1, V1, W1 | RED | U2, V2, W2 | BLUE | U5, V5, W5 | RED | | | |
| Temperature Limiters | F0 | PURPLE | F1 | BLACK | F2 | YELLOW | | | |
| ALL STATOR POWER LEADS SHALL BE 1.5mm² | | | | | | | | | |

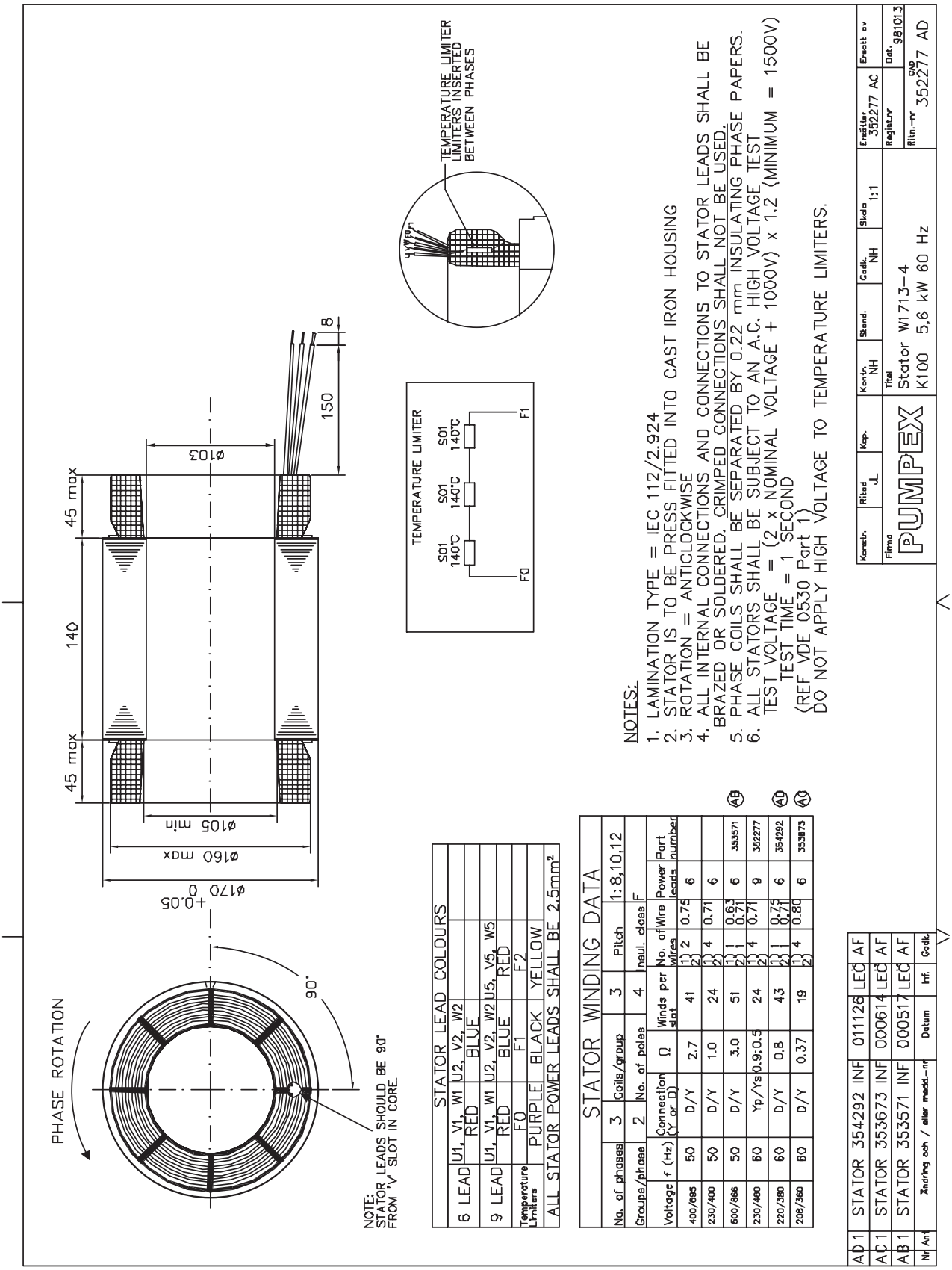
| STATOR WINDING DATA | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| No. of phases | 3 | Coils/group | 3 | Pitch | 1: 8,10,12 | | | | | |
| Groups/phase | 2 | No. of poles | 4 | Insul. class | F | | | | | |
| Voltage | f (Hz) | Connection (Y or D) | Ω | Winds per slot | No. of wires | Wire | Power leads | Part number | | |
| 400/695 | 50 | D/Y | 4.9 | 62 | 1) 2<br>2) 2 | 0.63 | 6 | 351831 | | |
| 230/400 | 50 | D/Y | 1,7 | 36 | 1) 2<br>2) 1 | 0.63<br>0.71 | 6 | 351830 | | |
| 500/865 | 50 | D/Y | 7.8 | 78 | 1) 2<br>2) 2 | 0.56 | 6 | 352274 | | |
| 208 | 60 | D | 0,7 | 28 | 1) 2<br>2) 1 | 0.75<br>0.80 | 3 | 354139 | | |
| 230/460 | 60 | Yp/Ys | 0.9/1.9 | 36 | 1) 2<br>2) 2 | 0.63<br>0.67 | 9 | 352193 | | |
| 220/380 | 60 | D/Y | 1,1 | 29 | 1) 2<br>2) 1 | 0.75<br>0,71 | 6 | 354261 | | |

SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150

K 80/83/87/100/150.58.0410.Eng/Digital

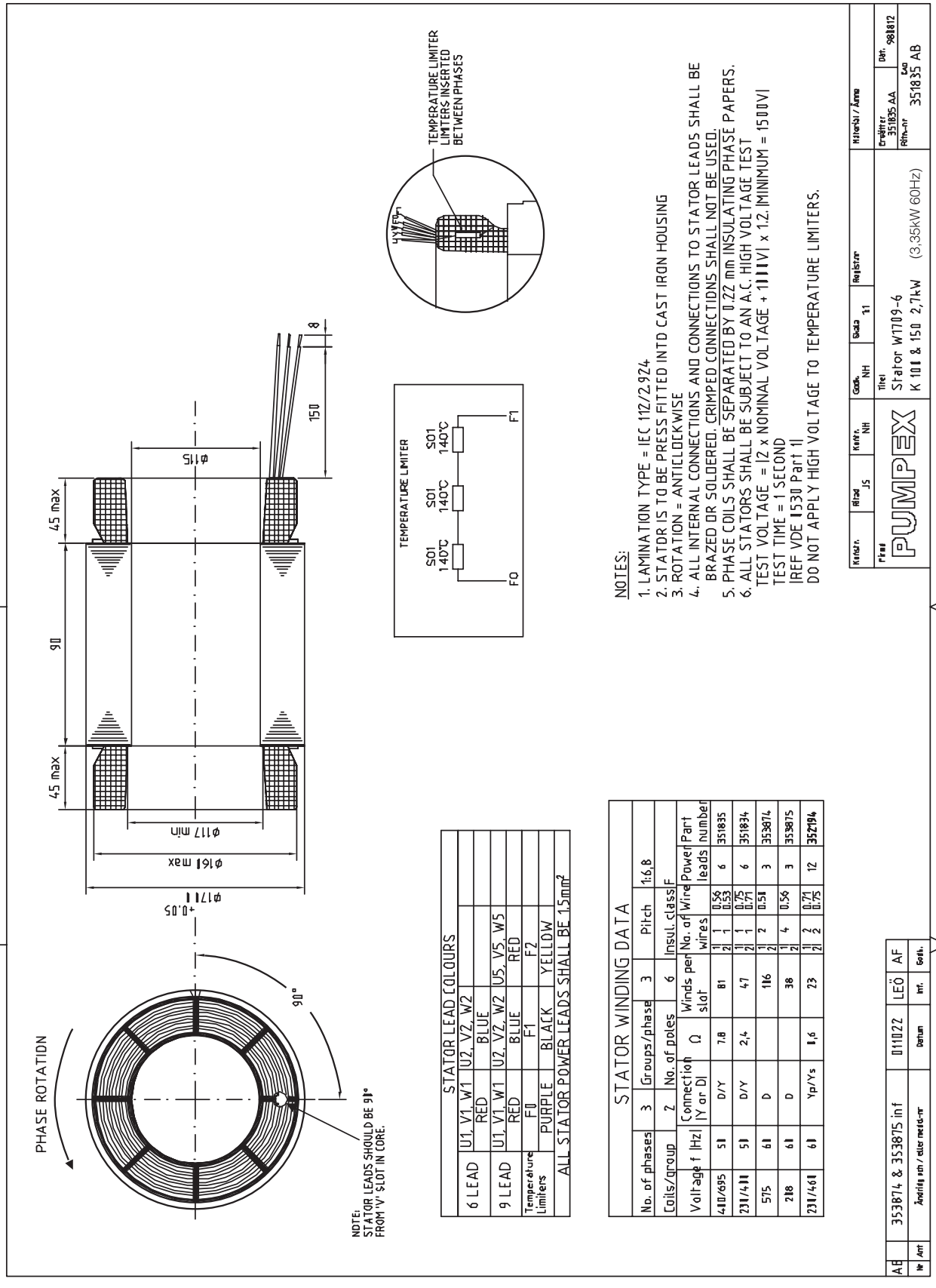

PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 90°
FROM 'V' SLOT IN CORE.
Ø170.0 +0.05
Ø160 max
Ø105 min
45 max
140
45 max
Ø103
150
8
TEMPERATURE LIMITER
SD1 140°C
SD1 140°C
SD1 140°C
F1
F0
TEMPERATURE LIMITER INSERTED BETWEEN PHASES
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
Konstr. Ritad JS Kopp.
Firma PUMPEX AB
Kontr. NH Stand.
Mtal Stator W1714-4
Godk. NH Skala 1:1
K100 6kW 50Hz (7,3kW 60Hz)
Ersätter 351833 AD Ersatt av
Registr.nr Dat. 980812
Ritn.-nr 351833 AE
STATOR LEAD COLOURS
6 LEAD U1, V1, W1 U2, V2, W2
RED BLUE
9 LEAD U1, V1, W1 U2, V2, W2 U5, V5, W5
RED BLUE RED
Temperature Limiters F0 F1 F2
PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 2.5mm²
STATOR WINDING DATA
No. of phases 3 Coils/group 3 Pitch 1:8,10,12
Groups/phase 2 No. of poles 4 Insul. class F
Voltage f (Hz) Connection (Y or D) Ω Winds per slot No. of wires Wire Power leads Part number
400/695 50 D/Y 2.7 41 1) 2 0.75 6 351833
2) 2
230/400 50 D/Y 1.0 24 1) 4 0.71 6 351832
2) 4
575 60 D 3.0 52 1) 2 0.56 3 353490
2) 1 0.53
500/866 50 D/Y 3,0 51 1) 1 0.63 6 354471
2) 1 0.71
230/400 60 Yp/Ys 0.9;0.5 24 1) 4 0.71 9 351844
2) 4
220/380 60 D/Y 0,8 43 1) 1 0.75 6 354291
2) 1 0.71
208/360 60 D/Y 0.37 19 1) 4 0.80 6 353674
2) 4
AE 1 STATOR 354471 INF 020404 LEÖ AF
AD 1 STATOR 354291 INF 011126 LEÖ AF
AC 1 STATOR 353674 INF 000614 LEÖ AF
AB STATOR 353490 INFÖRD 000203 LEÖ AF
Nr Ant. Ändring och / eller medd.-nr Datum Init. Godk.


TEMPERATURE LIMITER
LIMITERS INSERTED
BETWEEN PHASES
TEMPERATURE LIMITER
S01 140°C
S01 140°C
S01 140°C
F1
F2
8
150
45 max
140
45 max
ø103
ø105 min
ø160 max
ø170 0 +0.05
90°
PHASE ROTATION
NOTE:
STATOR LEADS SHOULD BE 90°
FROM 'V' SLOT IN CORE.
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = (2 x NOMINAL VOLTAGE + 1000V) x 1.2 (MINIMUM = 1500V)
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
Konstr. Ritad JL Kop. Kontr. NH Stand. Godk. NH Skala 1:1 Ersätter 352277 AC Ersatt av
Firma PUMPEX Titel Stator W1713-4 K100 5,6 kW 60 Hz Register Dat. 981013
Ritn.-nr SAP 352277 AD
STATOR LEAD COLOURS
6 LEAD U1, V1, W1 U2, V2, W2
RED BLUE
9 LEAD U1, W1 U2, V2, W2 U5, V5, W5
RED BLUE RED
Temperature Limiters F0 F1 F2
PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 2.5mm²
STATOR WINDING DATA
No. of phases 3 Coils/group 3 Pitch 1:8,10,12
Groups/phase 2 No. of poles 4 Insul. class F
Voltage / f (Hz) Connection (Y or D) Ω Winds per slot No. of Wires Wire Power leads Part number
400/695 50 D/Y 2.7 41 2 0.75 6
230/400 50 D/Y 1.0 24 4 0.71 6
500/866 50 D/Y 3.0 51 1 0.63 6 353571
230/460 60 Yp/Ys 0.9:0.5 24 4 0.71 9 352277
220/380 60 D/Y 0.8 43 1 0.75 6 354292
208/360 60 D/Y 0.37 19 4 0.80 6 353873
AD1 STATOR 354292 INF 011126 LEC AF
AC1 STATOR 353673 INF 000614 LEC AF
AB1 STATOR 353571 INF 000517 LEC AF
Nr Ant Ändring och / eller medd.-nr Datum Inf. Godk

SERVICE INSTRUCTION

# K 80, 83, 87, 100, 150




PHASE ROTATION
90°
NOTE:
STATOR LEADS SHOULD BE 91°
FROM 'V' SLOT IN CORE.
ø171 +0.05
ø161 max
ø117 min
ø115
45 max
90
45 max
150
8
TEMPERATURE LIMITER
LIMITERS INSERTED
BETWEEN PHASES
TEMPERATURE LIMITER
SO1 140°C
SO1 140°C
SO1 140°C
F1
F0
NOTES:
1. LAMINATION TYPE = IEC 112/2.924
2. STATOR IS TO BE PRESS FITTED INTO CAST IRON HOUSING
3. ROTATION = ANTICLOCKWISE
4. ALL INTERNAL CONNECTIONS AND CONNECTIONS TO STATOR LEADS SHALL BE BRAZED OR SOLDERED. CRIMPED CONNECTIONS SHALL NOT BE USED.
5. PHASE COILS SHALL BE SEPARATED BY 0.22 mm INSULATING PHASE PAPERS.
6. ALL STATORS SHALL BE SUBJECT TO AN A.C. HIGH VOLTAGE TEST
TEST VOLTAGE = 12 x NOMINAL VOLTAGE + 1000V | x 1.2. MINIMUM = 1500V |
TEST TIME = 1 SECOND
(REF VDE 0530 Part 1)
DO NOT APPLY HIGH VOLTAGE TO TEMPERATURE LIMITERS.
STATOR LEAD COLOURS
6 LEAD U1, V1, W1 U2, V2, W2
RED BLUE
9 LEAD U1, V1, W1 U2, V2, W2 U5, V5, W5
RED BLUE RED
Temperature Limiters F0 F1 F2
PURPLE BLACK YELLOW
ALL STATOR POWER LEADS SHALL BE 1.5mm²
STATOR WINDING DATA
No. of phases 3 Groups/phase 3 Pitch 1:6,8
Coils/group 2 No. of poles 6 Insul. class F
Voltage f [Hz] Connection |Y or Δ| Ω Winds per slot No. of wires Wire Power leads Part number
410/695 50 D/Y 7,8 81 1 1 0,56 6 351835
2 1 0,63
231/400 50 D/Y 2,4 47 1 1 0,75 6 351834
2 1 0,71
575 60 D 116 2 2 0,51 3 353874
240 60 D 38 1 4 0,56 3 353875
2 2 0,71
231/460 60 Yp/Ys 1,6 23 1 2 0,75 12 352194
2 2
Kontr. JS
Godk. NH
Skala 1:1
Material
Ritnr 351835 AA
Dat. 981012
Ant. 1
Ändring enl. ECN 11022 LEÖ AF
Nr 353874 & 353875 inf
Ändring enl. ECN-nr
Datum
Init.
Godk.
AE
PUMPEX
Titel Stator W1709-6 (3,35kW 60Hz)
K 101 & 150 2,7kW
Ritnr 351835 AB